

## Assessment of Knowledge, Attitude and Practices regarding Hepatitis-B among nursing students

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### Abstract:

**Background:** Hepatitis is an inflammatory disease of the liver leading to permanent liver damage including liver cirrhosis or Hepato-cellular carcinoma. Hepatitis B infection is a major health hazard throughout the world and Health-care workers mainly nursing personnel are at a high-risk of acquiring the disease as they are in regular contact with the patients. The Hepatitis-B vaccine is highly safe and effective, and prevents HBV infection and its serious consequences. This study is done to assess the knowledge, attitude, and practices regarding Hepatitis-B among nursing students.

**Materials and Methods:** A cross-sectional study was conducted on nursing students of College of Nursing, SVBP Hospital, Meerut. Nursing students of all four years who were present and given consent on the day of data collection were recruited for the study. A pre-designed pre-tested self-administered questionnaire was used to assess the knowledge, attitude and practices of Hepatitis-B among nursing students. Data thus collected is analyzed using appropriate statistical methods.

**Results:** Out of total 297 nursing students who participated, 94.9% knew that Hepatitis-B is caused by a virus. Majority knew that transmission of Hepatitis-B is through Multiple sex partners(66.7%), Blood Transfusion(92.6%), Sharing needles/IV drug users(91.3%), and needle stick injuries(91.2%). 77.4% were aware that Hepatitis-B is preventable. Only 60% of the students were vaccinated with Hepatitis-B vaccine and out of them only 41% have received all the three doses. 40.7% students had accidental needle-stick injuries but only 50.4% of them get the patient tested for Hepatitis-B.

**Conclusion:** In spite of having good knowledge about the disease and various measures for its prevention, there were lot of myths about its transmission and also the vaccination status and practices were not satisfactory.

**Key Word:** Hepatitis-B, Hepatitis-B vaccine, Hepatitis-B virus (HBV), nursing students

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### I. Introduction

Hepatitis-B Virus (HBV) infection is a disease of major public health importance worldwide<sup>1</sup>. HBV primarily targets liver and can cause both acute and chronic liver disease. Acute Hepatitis-B is a short term illness which occurs within the first 6 months of exposure while Chronic Hepatitis-B is a lifelong infection. In majority of people HBV infection is asymptomatic but it can also lead to serious complications such as cirrhosis of the liver and hepatocellular carcinoma<sup>2</sup>.

Globally nearly 257 million people were living with HBV by the end of 2015 and approximately 887,000 deaths have occurred, largely because of chronic complications as reported by World Health Organization (WHO)<sup>3</sup>, WHO also estimates that more than two billion people in the world have serological evidence of prior HBV infection<sup>4</sup>. Due to the low awareness about the disease, most of the patients are diagnosed at a stage where the disease has already reached to complicated stage and is irreversible<sup>5</sup>.

Health care workers working in the health care settings are at high risk of HBV infection. The prevalence rate of HBV infection in Health care workers is about 2–10 times higher than the general populations in the world.

Major risk factors for HBV infection in health care workers are percutaneous or mucosal exposure to infected blood or body fluids, which can be due to use of inadequately sterilized medical equipment or contact with non-intact skin<sup>6</sup>. The average risk for acquiring HBV infection after percutaneous exposure to infected blood has been estimated to be 6–30 %; whereas it is about 0.3 % for human immunodeficiency virus<sup>6</sup>.

Nursing professionals form the fundamental element in the healthcare panel. They are in continuous contact with the patients and are therefore more commonly exposed to the risk factors involved. Hence, they must have a proper knowledge about Hepatitis-B infection, its modes of transmission, clinical features,

complications, and various preventive measures which should be taken, to take necessary precautions to prevent the disease and also to spread awareness about hepatitis B infection among public, patients, and other health-care professionals<sup>2</sup>.

Vaccination and the use of personal protective equipments are the two major weapons for the prevention of hepatitis B infection<sup>2</sup>. The knowledge, attitude and practice (KAP) surveys serve as an important source to help identify the problems and recommend solutions to it. Very few studies have been done to assess knowledge regarding Hepatitis-B among nursing students.

Assessing the role of health care workers including nurses as health provider and health educator should be the utmost priority, as they are the main work force for patient care in hospitals and have the first contact with the patients.

**Objectives:** To assess the knowledge, attitude and practices regarding Hepatitis-B infection among nursing students.

To assess Hepatitis-B Vaccination status of nursing students.

## II. Material And Methods

A Cross sectional study was conducted by Department of Community Medicine, LLRM medical college, Meerut from September 2019 to November 2019 using purposive sampling. The study was conducted in the College of Nursing, SVBP Hospital, Meerut. Data was collected from the nursing students of all four academic years i.e. first year to final year.

**Study design:** Cross sectional study

**Study location:** College of Nursing, SVBP Hospital, Meerut, Uttar Pradesh, India

**Study duration:** September 2019 to November 2019

**Sample size:** 297 nursing students

**Inclusion criteria:** All the nursing students present on the day of data collection and also gave consent were included for the study.

**Exclusion criteria:** Nursing students not present on the day of data collection and also those who were not willing to participate were excluded from the study.

**Procedure methodology:** A pre-designed, pre-tested, self-administered questionnaire was used to collect information. The participants were asked to complete the questionnaire without leaving any un-attempted or incomplete questions. Verbal informed consent was taken from all the participants and they were assured of maintaining strict confidentiality. The study was approved by the institutional ethical committee.

**Statistical analysis:** Data collected was entered and analyzed using Epi Info 7.0 software and presented in tabular and graphical formats. Percentages and mean values were calculated.

## III. Result

A total of 297 nursing students participated in the study. There were 255 female and 42 male nursing students who participated in the study. It was observed that 64.3% of participants were within the age group of 19-22 years and overall mean age of the participants was 19.4 years (SD±1.726).

Table 1 reveals about the knowledge of Hepatitis-B infection among the nursing students. Nearly 95% of the total participants were aware that Hepatitis-B infection is caused by a virus. Overall knowledge regarding Incubation Period of Hepatitis-B virus and Hepatitis-B surface antigen (HBsAg) being used for screening was very low, being only 34.7% and 53.5% respectively. Also knowledge about transmission of Hepatitis-B through Breast feeding/shaking hands was improper, only 42.1% and 68.1% had correct information, as Hepatitis-B is not transmitted through these modes. Also knowledge regarding modes of prevention of Hepatitis-B infection was assessed and it was seen that although students were aware about the Hepatitis-B Vaccine being used as a mode of prevention but knowledge regarding use of personnel protective equipments was very low. (Table 2)

**Table no 1:** Knowledge of nursing students about Hepatitis-B (Correct response)

Variables	Number (N=297) (n)	Percentages (%)
Hepatitis-B is caused by Virus (Yes)	282	94.9
Incubation Period of Hepatitis-B is 30-180 days(Yes)	103	34.7
Hepatitis-B is preventable (Yes)	230	77.4

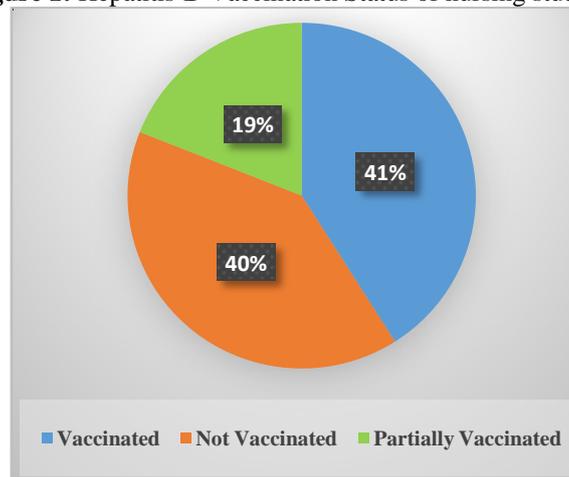
Transmission of Hepatitis-B is possible through needle stick injuries (Yes)	271	91.2
Vertical Transmission of Hepatitis-B is possible (Yes)	244	82.1
Transmission possible by multiple sex partners (Yes)	198	66.7
Transmission possible by blood transfusion (Yes)	275	92.6
Transmission possible by Breast feeding (No)	125	42.1
Transmission possible by shaking Hands (No)	202	68.1
Transmission possible by sharing eating utensils (No)	230	77.4
HBV surface antigen (HBsAg) is used for screening (Yes)	159	53.5
Minimum 3 doses required for complete HBV Vaccination (Yes)	173	58.2

**Table no 2:** Knowledge regarding Modes of Prevention of Hepatitis-B infection (Correct Response)

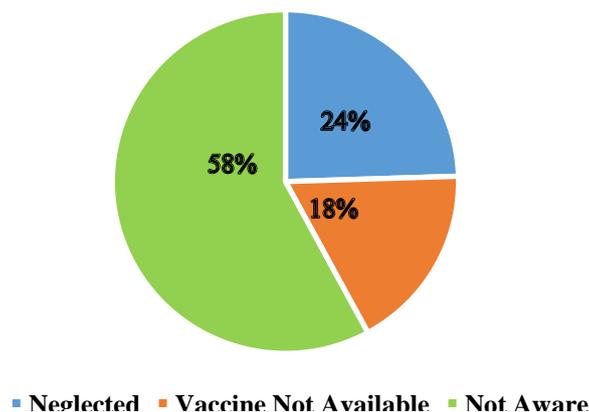
Variables	Number (N=297) (n)	Percentages (%)
Hepatitis-B vaccination (Yes)	275	92.6%
Avoid sharing of needles (Yes)	232	78.1%
Use of personnel protective equipments (Yes)	69	23.2%
Sterilization of surgical needles (Yes)	204	68.7%
Washing hands (No)	231	77.8%

On assessing the vaccination status of participants we found that 40% were not vaccinated with Hepatitis-B vaccine and only 41% were completely vaccinated with Hepatitis-B vaccine. The major reason for not taking the vaccine was that they were not aware about it. (Figure 1, 2)

**Figure 1:** Hepatitis-B Vaccination Status of nursing students.



**Figure 2:** Reasons for not taking Hepatitis-B Vaccine among the non-vaccinated & partially vaccinated.



**Table no 3:** Attitude of nursing students towards Hepatitis-B (Correct response)

Variables	Number (N=297) (n)	Percentages (%)
Hepatitis-B vaccination should be compulsory (Yes)	231	77.8%
Should report each and every case of Needle-stick injury (Yes)	192	64.6%
Will you attend a Hepatitis-B positive patient (Yes)	211	71.1%
Universal precaution should be strictly followed (Yes)	242	81.5%
Recommend post exposure prophylaxis for those exposed to Hepatitis-B infection (Yes)	165	55.6%

Majority of nursing students believed that vaccination should be made compulsory and universal precaution should be strictly followed. 71.1% showed positive attitude regarding attending a Hepatitis-B positive patient. 64.6% nursing students had positive concern to report each and every case of needle-stick injury. Only 55.6% showed positive attitude regarding post exposure prophylaxis to exposed health personnel. (Table 3)

Table 4 reveals practices of nursing students for use of syringes and Hepatitis-B vaccine. The study shows that majority of nursing students (83.2%) discarded used syringes in safe puncture proof box. 121 (40.7%) nursing students had accidental needle stick injuries/Pricks. Among 121 students, only 61 students tested the Hepatitis-B status of the patient of which only 21 students stated that they were exposed to Hepatitis-B positive patients. Further only 12 nursing students took post-exposure prophylaxis (PEP).

**Table no 4:** Practices regarding Hepatitis-B vaccine and Use of syringes.

Variables		Number (n)	Percentages (%)
Recapping Needles after use	Yes	156	52.5
	No	141	47.5
Use of Needle Destroyer	Yes	224	75.4
	No	73	24.6
Ever had Accidental Injuries/Pricks/Blood exposure	Yes	121	40.7
	No	176	59.3
If had Accidental Injury/Pricks–Tested Hepatitis-B status of the patient. (n=121)	Yes	61	50.4
	No	60	49.6
If exposed to Hepatitis-B positive blood- Took PEP (n=21)	Yes	12	57.1
	No	9	42.9

Discarding the used syringe in-			
a. Safe Puncture proof Box		247	83.2
b. Polythene Bag		26	8.7
c. Empty Box		24	8.1

#### IV. Discussion

Exposure to blood-borne pathogens, such as HBV and HIV (Human immunodeficiency virus) constitutes a significant occupational health hazard to health care professionals. Health care workers especially nursing students are placed in constant danger of acquiring HBV infection from the infected persons as they have an early exposure to the hospital settings<sup>1</sup>.

In the present study, nursing students had good knowledge regarding the causative agent of Hepatitis-B (94.9%) which is similar to Shah P D et al that reported 98.6% of nursing students were aware that Hepatitis-B is caused by Virus<sup>7</sup>.

Knowledge regarding the incubation period of Hepatitis-B was very less (34.7%) and the findings were consistent with that of the study done by Nalli S K et al<sup>1</sup>. Nearly 77% of participants mentioned that Hepatitis-B is preventable with majority were of the opinion that use of Hepatitis-B vaccine, avoiding sharing of needles and sterilization of surgical needles are major modes of prevention for Hepatitis-B infection and it was much more than that reported by Reang T et al with 38.5% having correct knowledge of Hepatitis-B being a preventable disease<sup>4</sup>.

Reang T et al reported that 83.2% were aware that HBsAg is used for screening of Hepatitis-B while in the present study only 53.5% were aware about HBsAg being used for screening of Hepatitis-B<sup>4</sup>.

Knowledge regarding the minimum number of doses required for complete HBV vaccination was optimum in 58.2% students in the present study which is much less than that reported by Nalli S K et al (83.49%) and Reang T et al (78.8%)<sup>1,4</sup>. Current study assessed the knowledge of participants regarding various modes of transmission of Hepatitis-B and majority were aware that Hepatitis-B can be transmitted by sharing needles/IV needle abusers (91.3%), Multiple sex partners (84.9%), Blood Transfusion (92.6%) and Needle stick injuries (95.3%) which is consistent with that reported by Sannathimmappa et al (2019)<sup>2</sup>.

In the present study, nearly 20%-30% of study participants had the misconception that Hepatitis-B can be transmitted by shaking hands or by sharing eating utensils. On other hand, Swarnalata et al reported that only 44.8% students were aware that it was not transmitted by shaking hands<sup>8</sup>. On evaluating the vaccination status of study participants, 41% were completely vaccinated which was less than that reported by Nalli S K et al with 76.61% being completely vaccinated<sup>1</sup>.

Majority of participants discarded used syringes in safe puncture proof box (83.2%) which was comparable with that reported by Reang T et al (83.1%)<sup>4</sup>. Out of those having accidental injuries only 50% assessed the Hepatitis-B status of the patient. Among those who were exposed to Hepatitis-B positive blood, only 57% took Post exposure Prophylaxis (PEP).

Although the knowledge regarding Hepatitis-B was found satisfactory but having knowledge regarding etiology, causative agent, modes of transmission and prevention is insufficient if the health care workers don't practice it during their routine clinical postings.

**Limitation of study-** In this study the information collected was self-reported by the participants and may not reflect the accurate level. Since the study was conducted on a single nursing college, due to which the results cannot be generalized.

#### V. Conclusion

The core support of the health care system is the well trained paramedical staff and health care workers. The deprived knowledge and bad practices of the staff adversely affects the patient's health. To improve the healthcare system a comprehensive technique should be implemented keeping the knowledge of healthcare staff at utmost priority.

The present study reveals that in spite of knowing enough about the Hepatitis-B disease causation and its modes of transmission, there were a lot of myths about its transmission from patient to community either through shaking hands, eating together or breast feeding. As we all know, nurses are the main workforce of patient's care in hospitals, so these myths and disbeliefs can be removed through proper knowledge. And it will also help them to be a better caretaker and health educator to patients.

So, our present programme should also target to educate and facilitate Paramedical staff and nurses. Nursing students should be involved in quiz on Hepatitis-B virus infection and also such topics should also be covered in detail in nursing curriculum.

Also periodic screening and complete immunization of all healthcare personnel should be made mandatory. An initiative can be made by every institution at their own level to check the Hepatitis-B immune

status of each and every student at the time of their entry to nursing course and also to provide free Hepatitis-B vaccine to the partially vaccinated and non-vaccinated students.

There should be a provision of imparting health education through orientation and sensitization programme. Further strategies should be made at institutional level also for preventing workplace exposure. Training programs on HBV infection, including PEP, and increasing vaccination coverage rate of all Health care workers are highly recommended.

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